sustainable sanitation alliance

Ecological settlement in Allermöhe Hamburg, Germany - Case study of sustainable sanitation projects

Rauschning, G., Berger, W., Ebeling, B., Schöpe, A. (2009)

Content - Summary

This case study is about a full-scale residential settlement project in an urban area in Hamburg, Germany. The settlement was built between 1982 and 1994 and consists of 36 single-family houses with approx. 140 inhabitants. 23 years have passed by now since this project was established successfully. Within the case study of SuSanA the experiences gathered in Allermöhe are presented in a compact way.

The project aims at having an ecological closed-loop process via on-site wastewater treatment and

Ecological Settlement in Allermöhe, Hamburg, Germany

Fig. 1: Project location

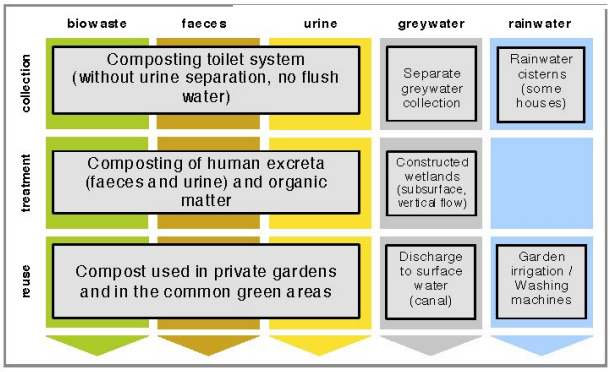

Fig. 2: Applied sanitation components in this project

1 General data

Type of project:
Residential settlement in urban area (full-scale)
Project period:
Start of planning: 1983
Construction period: 1985-2002 (in stages)
Start of operation: 1986 (in stages)
Project scale:
36 single-family houses, around 140 inhabitants
Address of project location:
Fanny-Lewald-Ring 32-92b
21035 Hamburg, Germany
Planning institution:
Berger Biotechnik GmbH (composting toilet systems)
AWA-Ingenieure (constructed wetland)
Executing institution:
Ökologisches Leben Allermöhe e.V. (a club of individuals)
Supporting institutions:
Government of the city of Hamburg
German Federal Ministry of Transport, Building and Housing
Hamburg Environmental Authorities

2 Objectives and motivation of the project

The project was planned to be a model settlement with high resource and energy efficiency through both the building and landscape architecture and by using appropriate ecological technology components. This included:

- Compact buildings, planned according to current state of the art for ecological architecture.
- Designs adjusted to the locations' environmental conditions.
- Ecological closed-loop processes via on-site wastewater treatment and therefore independence from a sewage system.
- High degree of involvement of the users in the planning, design, implementation and maintenance processes.

Fig. 3: Houses in middle court yard, constructed in 1986 (source: Berger Biotechnik).

3 Location and conditions

The ecological settlement is part of the new district Neu-Allermöhe, where 3,800 residential units were built between 1982 and 1994. It is a very green area with relatively low buildings (all less than 4 floors), 15 km southeast of Hamburg city centre. The eco-settlement in Neu-Allermöhe-Ost (New-Allermöhe-East) consists of 36 single-family houses with approx. 140 inhabitants aged from 0 to 99 years.

All inhabitants are owners of their houses and none of the houses are rented out. The two-storey twin and terraced houses differ in architecture to avoid uniformity. They are arranged around three small court yards: north, middle and south. The

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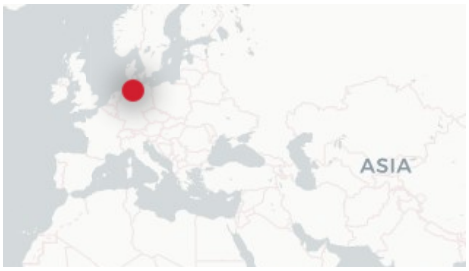

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therefore independence from a sewage system. Rainwater harvesting, composting toilets and constructed wetlands were the technologies applied in the project. Thereby a high resource and energy efficiency can be achieved.

This waterless toilet system saves about 40 litres of water per capita per day compared to a conventional flush toilet (10 L per flush) which adds up to 2,044 m^3 water savings per year for the whole settlement. Rainwater from the area and especially the roofs is either collected in small basins and ditches to infiltrate into the soil or in cisterns for irrigation of green space. Further project components are photovoltaic systems and thermic solar heaters as well as passive houses with very good insulation and a combined heat recovery.

In 2009, the costs for one improved Terra Nova system, delivery and installation were approx. EUR 6,500. The total costs for a constructed wetland mounted up to circa EUR 95.000. All operation and maintenance activities are carried out by the residents themselves (or volunteers amongst the residents), which reduces costs and increases the feeling of ownership. Through practical experience it was possible to adjust the system in case of problems, which keeps the settlement in Allermöhe a reference project with a long history which can inspire many national and international visitors to copy the approach.

Bibliographic information

Rauschning, G., Berger, W., Ebeling, B., Schöpe, A. (2009). Ecological settlement in Allermöhe Hamburg, Germany - Case study of sustainable sanitation projects. Sustainable Sanitation Alliance (SuSanA)

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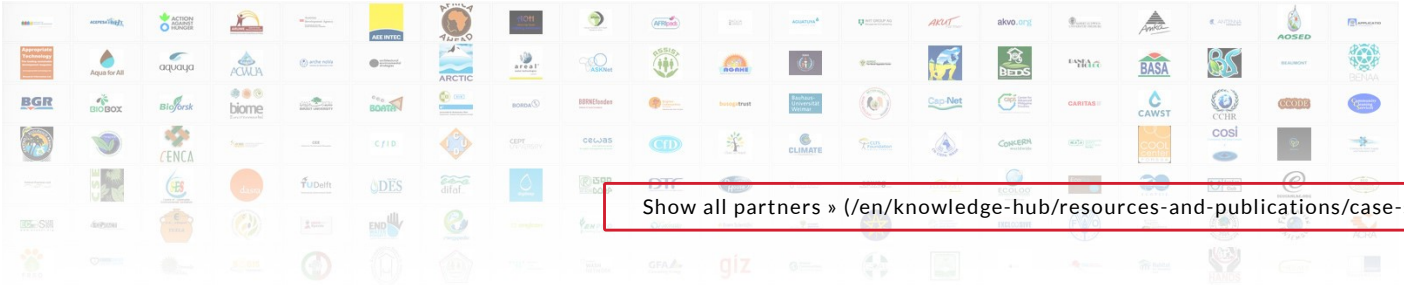

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